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The Southwest Fisheries Science Center's

MAY 20 1994

1994 Billfish Newsletter

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National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii

Results of Cooperative Programs

- 1993 Billfish tagging and recoveries by taggers/captains
- 1992 Billfish angler catch rate trends for the Pacific, Indo-Pacific and Indian Oceans

NOAA
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

INTRODUCTION

The *Billfish Newsletter* is an annual publication produced by the Southwest Fisheries Science Center (SWFSC) as a service to the U.S. angling community. Emphasis is on billfish angling in the Pacific, Indo-Pacific and Indian Oceans. The results of the ***1992 Pacific-Indian Ocean International Billfish Angling Survey*** and the ***1993 Cooperative Marine Game Fish Tagging Program*** are described in this issue. The data presented are the result of the cooperation of billfish anglers and sport fishing clubs with the SWFSC, and we express our sincere appreciation to all anglers completing the survey forms and to all those who tag and release billfish.

The ***Billfish Angler Survey*** provides the only estimates of billfish angling activities in the Pacific and Indian Oceans. Collection of recreational billfish catch and effort data began in 1969 and provides an index of catch and effort trends for the recreational fishing community. The recreational fisheries are important economically to many areas of the Pacific. Tourism in places such as Hawaii and Baja California is tremendously enhanced by the presence of billfish sport fishing facilities. Total expenditures disbursed in pursuit of catching trophy billfish can and has exceeded the value of commercial fisheries operating in adjacent areas.

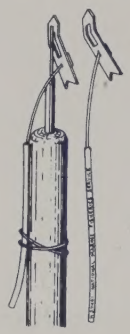
The trends in the angler catch rates of a particular region can show annual changes resulting from fishing or environmental effects. The decline in the catch rate for striped marlin around the tip of Baja California in the 1970s was shown to be related to extensive commercial fishing operations. The subsequent restrictions limiting commercial fishing in Mexican waters resulted in increased angler catch rates during the late 1970s. The effects of El Niño related events also influence the trends in angler catch rates. The cold water episode at the tip of Baja in 1984 resulted in a decreased rate of success for striped marlin. In Hawaii there remains concern for sustaining angler catch rates due to the continued success of the commercial longline fishery targeting swordfish and tuna. While onboard observers document the by-catch of billfish in this fishery, the trends in angler catch rates monitor the abundance of billfish available to recreational billfish anglers.

TRENDS IN BILLFISH ANGLER CATCH RATES; 1969 - 1992

Billfish anglers responding to the ***Billfish Angler Survey*** for 1992 reported catching 3,751 billfish throughout the Pacific, Indo-Pacific and Indian Oceans. The total number of days reported fishing for billfish increased

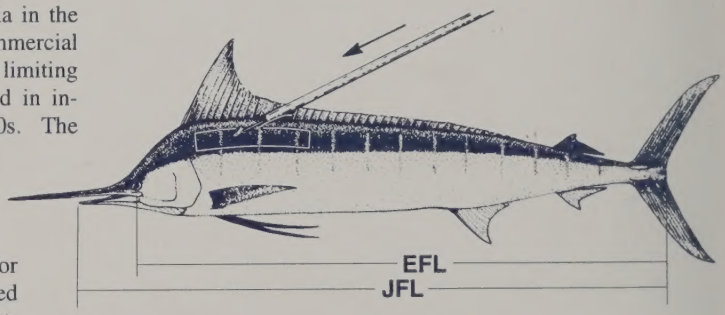
HOW TO TAG YOUR BILLFISH

First, have your tag loosely affixed to the applicator tip with a rubber band before you catch your fish.



When the fish is brought along side your boat, allow the fish time to calm down so you can better control it for accurate tag insertion.

The tag is inserted in the dorsal back muscle just below and behind the tallest part of the dorsal fin (pictured below). The tag should be inserted a full two inches into the muscle and at an angle matching the flow of water over the fish's back. Take care to avoid the head and gill areas.



The fish should be tagged without excessive handling or removing it from the water. If the hook can not be easily removed the fish can be released by cutting the leader as close to the hook as possible.

A fish that is over-exerted can often be revived by slowly pulling it through the water until it begins to swim on its own. A fish that has thrown its stomach can still be released. Several returns have been received when the 'Billfish Tagging Report' card indicated "stomach thrown".

It is equally important to complete and promptly return the 'Billfish Tagging Report' cards.

WINNING BILLFISH NEWSLETTER COVER PHOTO

Black marlin off Tropic Star Lodge, Pinas Bay, Panama in 1992. Taken on a trolled, live tuna, fought dead-boat, and released in good condition in 34 minutes. Estimated weight was 600 pounds.

- Angler: Hans Pfenninger
- Photographer: Elsbeth Pfenninger
- Männedorf, SWITZERLAND
- Camera:Nikon F4S with AF 80-200mm lens at 1/4000 sec. Fuji Super Hg 600.

6.4% to 8,712 days. The catch rate was 0.43 billfish caught per fishing day (or 2.3 days fishing per billfish). This is down about 25% from the 1991 catch rate of 0.57 billfish/day but very similar to the 1990 catch rate of 0.42 billfish/day.

These data are the mean values calculated over the reporting year and are not indicative of seasonal highs or lows encountered in any particular region. Additionally for those regions reporting fewer than 100 angler days, the statistical error in the mean is somewhat high. The value of these data are in the long-term trends observed. Trends that can be compared with other events such as meteorological patterns, local economies, or regional fisheries.

Table 1 shows the results of the 1992 Survey as reported by anglers, by landing locations for the Pacific and Indian Oceans. Included are the fishing area, number of angler fishing days, CPUE in terms of fish caught per fishing day and the major species reported. For comparison the 1991 figures are shown in parenthesis. Species codes are striped marlin (SM), blue marlin (BLM), black marlin (BLK), sailfish (SF) and swordfish (SW).

Highest catch rate for striped marlin was at the southern tip of Baja California, Mexico. Best catch rate for blue marlin was in Hawaii and Tahiti while black marlin were most readily taken off Australia and Papua New Guinea. The greatest success for sailfish was in the Indian Ocean (Seychelles) and off Costa Rica and Guatemala in the Pacific.

The trends in CPUE (catch per angler-day) resulting from the Survey respondents are shown graphically by location for striped marlin (Figure 1), blue marlin (Figure 2), black marlin (Figure 3), and sailfish (Figure 4). In these figures, the numbers shown along each CPUE line indicate the number of angler days used in the calculation of the CPUE for that year.

SURVEY RESPONSE

Your response to this Survey is needed to better determine the trend of angler catch rates which provides an index on the health of the billfish stocks important to recreational fisheries.

Enclosed you will find three copies of the Billfish Angler Survey card for the 1993 Survey year; one for your individual use and extras for family members or other anglers not familiar with the Survey. Additional 1993 Survey cards are available to billfish anglers through this office.

Table 1. Results of 1992 Billfish Angler Survey. Data in parentheses (-) are values recorded in 1991.

LOCATION	ANGLER FISHING DAYS	BILLFISH PER FISHING DAY (CPUE)	MAJOR SPECIES
PACIFIC OCEAN			
S. California	2,220 (2,107)	0.12 (0.06)	SM
Hawaii	3,379 (1,892)	0.28 (0.38)	BLM
Baja California, Mexico	1,240 (1,952)	0.60 (0.46)	SM
Guaymas, Mexico	37 (73)	0.46 (0.22)	SF
Mazatlan, Mexico	23 (143)	0.96 (0.87)	SF
Puerto Vallarta, Mexico	42 (22)	0.55 (0.68)	SF
Manzanillo, Mexico	28 (69)	0.61 (0.32)	SF
Acapulco, Mexico	79 (89)	0.90 (1.03)	SF
Guatemala	334 (232)	1.37 (1.37)	SF
Costa Rica	234 (288)	2.03 (2.33)	SF
Panama	38 (64)	1.97 (2.69)	SF
Peru	115 (5)	0.41 (0.40)	SW
Guam, U.S.A.	102 (164)	0.29 (0.73)	BLM
Tahiti, French Polynesia	83 (104)	0.47 (0.38)	BLM
Fiji	51 (24)	0.14 (0.12)	BLM
New Zealand	143 (275)	0.06 (0.92)	SM
Australia	213 (204)	0.55 (0.42)	BKM
Japan	38 (3)	0.16 (0.0)	BLM
INDO-PACIFIC			
Micronesia	7 (1)	0.43 (-)	BLM
Papua New Guinea	30 (90)	0.63 (0.14)	BKM
Malaysia	35 (23)	0.09 (0.04)	BLM
Thailand	2 (8)	0.50 (0.12)	SF
Hong Kong (Pratas)	31 (20)	0.03 (-)	BLM
INDIAN OCEAN			
Kenya	142 (219)	1.07 (1.37)	SF
Mauritius	11 (48)	0.09 (0.40)	BLM
Seychelles	43 (-)	4.81 (-)	SF

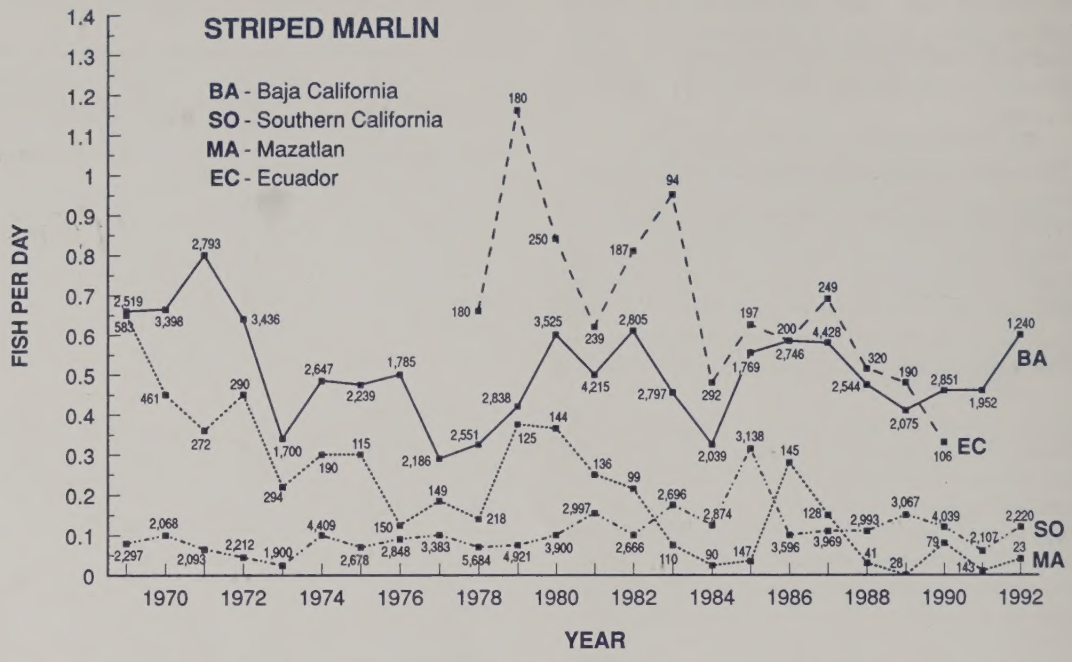


Figure 1. CPUE (number of fish/angler day) for striped marlin with the number of angler days reported by region shown for each year from 1969 to 1992.

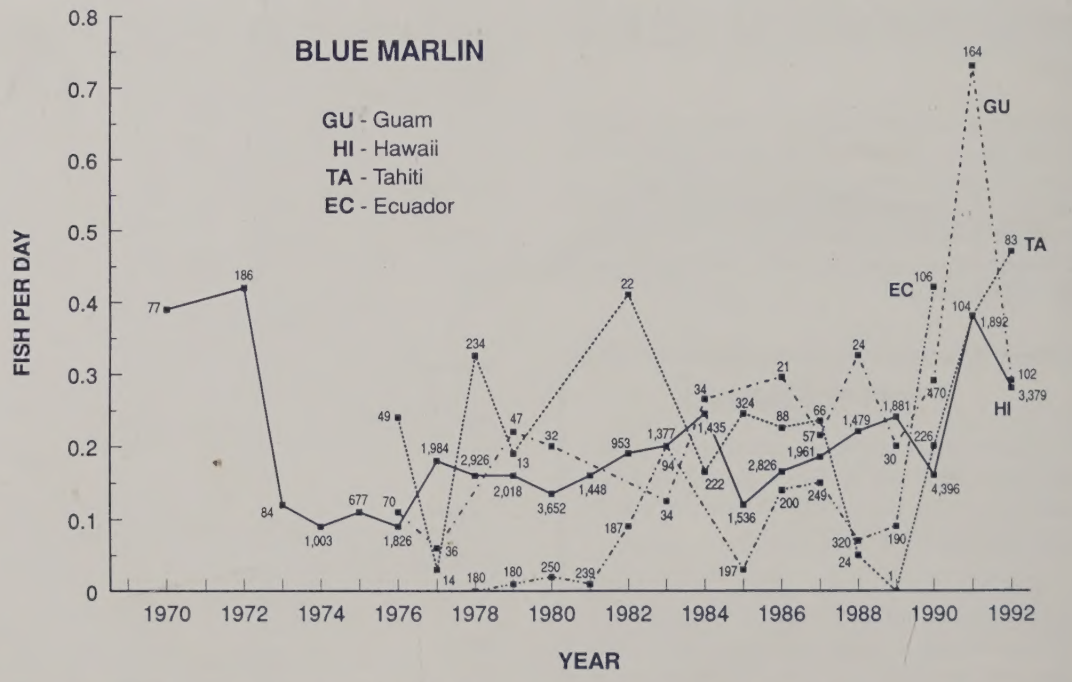


Figure 2. CPUE (number of fish/angler day) for blue marlin with the number of angler days reported by region shown for each year from 1969 to 1992.

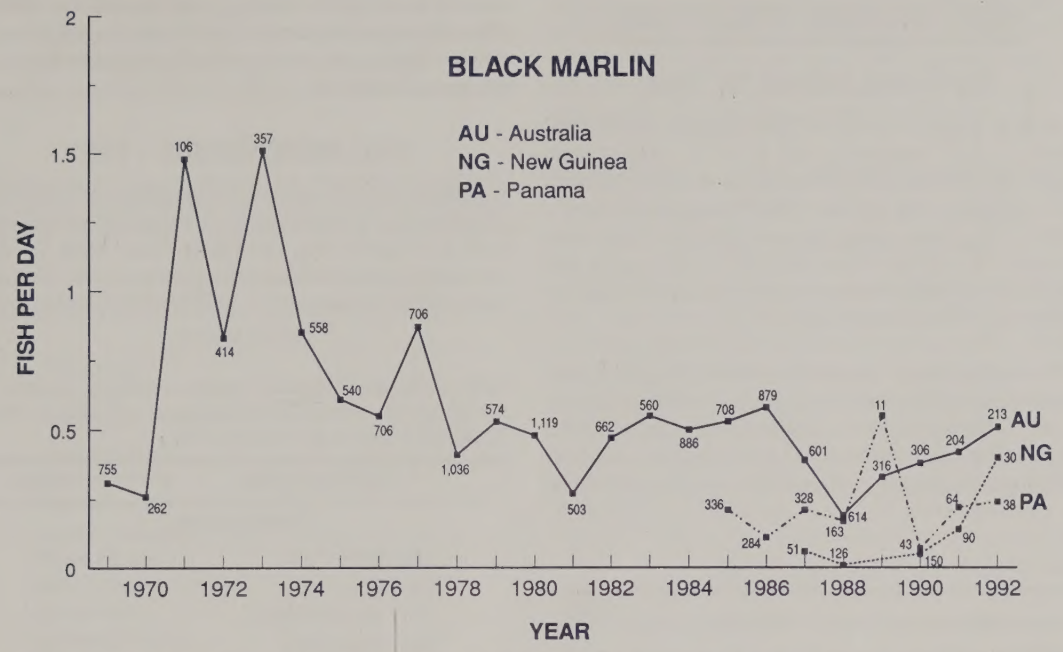


Figure 3. CPUE (number of fish/angler day) for black marlin with the number of angler days reported by region shown for each year from 1969 to 1992.

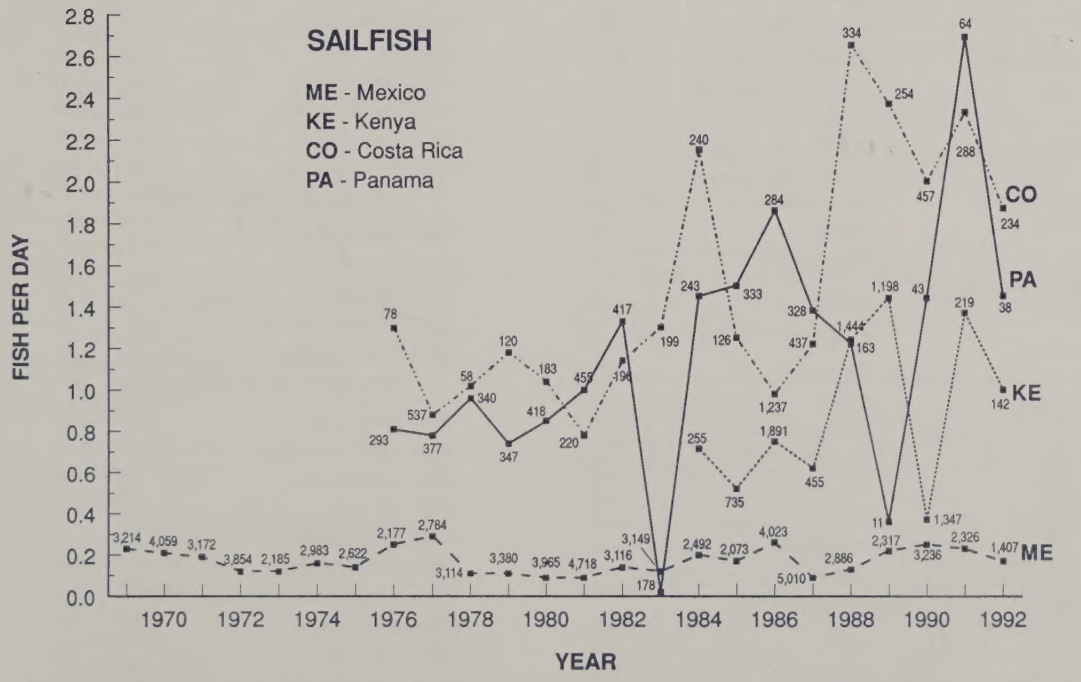


Figure 4. CPUE (number of fish/angler day) for sailfish with the number of angler days reported by region shown for each year from 1969 to 1992.

COOPERATIVE MARINE GAME FISH TAGGING PROGRAM

TAGGING RESULTS 1993

Billfish tagging reports ***(Billfish Tagging Report)*** received in 1993 indicate a total of 1,135 billfish were tagged and released; a 34% increase over 1992. Billfish anglers tagged 952 billfish while commercial swordfish/tuna longliners operating out of Hawaii tagged and released 187 billfish. Fourteen billfish were tagged and released from NMFS research ships. The distribution of billfish tagged is shown in Table 2.

We would like to list all the names of anglers and charter boat captains that have tagged and released billfish in 1993. The list, however, would be long and in excess of space available. This year, we have listed the names of leading captains tagging substantial numbers of billfish in their region (Table 4). The names of anglers releasing three or more tagged billfish in 1993 are listed in Table 5. We emphasize that although your name may not be listed, we nonetheless appreciate your efforts in contributing to the research program.

Table 2. Summary of billfish tagged - 1993.

AREA	SPECIES	TOTAL
PACIFIC OCEAN		
Southern California, U.S.A.	Striped Marlin	77
	Broadbill Swordfish	1
Hawaii, U.S.A.	Blue Marlin	314
	Striped Marlin	281
	Broadbill Swordfish	165
	Short-Billed Spearfish	56
	Black Marlin	3
	Sailfish	3
Baja California, Mexico	Blue Marlin	29
	Striped Marlin	54
	Sailfish	18
	Black Marlin	2
Manzanillo/Acapulco, Mexico	Sailfish	6
Panama	Sailfish	48
	Black Marlin	21
Colombia	Sailfish	1
	Shortbill Spearfish	1
Guam, U.S.A.	Blue Marlin	36
Fiji	Blue Marlin	8
	Sailfish	5
Philippines	Blue Marlin	1
	Sailfish	1
INDIAN OCEAN		
Kenya	Sailfish	2
Mauritius	Blue Marlin	2
TOTAL		1,135

TAG RECOVERIES - 1993

Fourteen billfish tags were returned in 1993. One from a blue marlin, 9 striped marlin, 1 swordfish and one each from a yellowfin tuna and bigeye tuna (Table 3). One recovery from a blue shark was also received. The blue marlin was at liberty only 6 days and had traveled only a

Table 3. Names of captains tagging substantial numbers of billfish, and the number of billfish tagged and released. From Tag Report Cards received during 1993.

CAPTAIN NAME	TOTAL
HAWAII, U.S.A.	
Capt. Mark Shultz	41
Capt. Doug Barna	34
Capt. Kelley Everette	21
Capt. William Dorr	19
Capt. Ron Freitas	18
Capt. Randy Parker	18
Capt. Gene Vanderhoek	16
Capt. Jeff Fay	13
Capt. Randy Orkisch	13
Capt. Rob Purdy	12
Capt. Freddy Rice	12
Capt. Chuck Haupert	11
Capt. Kevin Hogan	11
Capt. Dale Leverone	10
BAJA CALIFORNIA, MEXICO	
Capt. Gilberto Castro	9
Capt. Martin Collins	7
Capt. Edwardo	3
Capt. Guillermo Sandez	3
Capt. Tony Nungaray	2
SOUTHERN CALIFORNIA, U.S.A.	
Capt. Jerry Austin	5
Capt. Kathy Henderson	5
Capt. Ken Brookins	4
Capt. Bill Carey	4
Capt. Doug Carson	4
Capt. Michele Kogler	4
Capt. Richard Madden	4
Capt. Stan Ecklund	3
Capt. Jeff Jones	3
Capt. Jack Patterson	3
Capt. Terry Swanson	3

short distance. Of the three striped marlin tagged in Southern California, one traveled 2,068 miles from near Santa Barbara Island, California to just north-east of the Island of Maui, Hawaii in 214 days. Another striped marlin tagged near Avalon, Santa Catalina Island traveled 865 miles south to the east cape area of Baja California, Sur in 144 days. The six striped marlin tagged, released and recovered around the Hawaiian Islands indicates significant inter-Island movements. The swordfish tagged in the north Pacific was at liberty a full year but was recaptured only 321 miles from the release location.

Table 4. Names of anglers tagging 3 or more billfish in Hawaii; Baja California, Sur, Mexico; and Southern California. Information taken from Billfish Tagging Report cards received during 1993.

ANGLER NAME	TOTAL
HAWAII, U.S.A.	
Geza Csige	16
John Arts	8
Jeff Meyer	8
Zachary Smith	8
Louise Sterling	6
Sue Stolzman	6
Lorrin Thompson	6
Sean Freitas	5
Marj O'Brien	5
Russ Smith	5
Jocelyn Everette	4
Bill Hoey	4
Marlon Holden	4
Dick Pusti	4
Seb Annino	3
Joe Arceneaux	3
Debra Jane Baldwin	3
David Blair	3
Mark Davis	3
Capt. Norm Isaacs	3
Ryan Layton	3
Mike Moody	3
Gordon Phillips	3
Mark Shultz	3
Mandy Shiraki	3
David Small	3
BAJA CALIFORNIA, SUR, MEXICO	
Richard Mitten	10
Jean-Pierre Malgorn	8
Don Anderson	7
Brian Bray	5
Bernard A. Guentner	4
Dennis L. Gagnon	3
Al Watlet	3
SOUTHERN CALIFORNIA, U.S.A.	
Stan Ecklund	6
Jerry R. Austin	5
Karl Kogler	4
Jim Madden	4
Sean Mulrooney	4
Brad Thompson	3
Mark M. Wisch	3

INFORMATION FOR RECEIVING THIS NEWSLETTER AND BILLFISH ANGLER SURVEY FORM

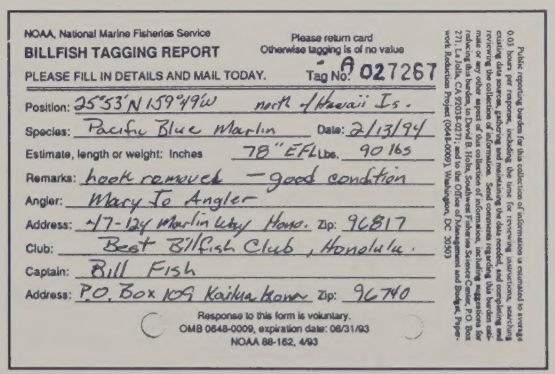
This Newsletter is sent to individuals who have, **within the past year, tagged and released billfish, or have submitted the *Billfish Angler Survey* form to the Southwest Fisheries Science Center.** U.S. Government regulations require us to purge our mailing list each year. If you did not fish for billfish in 1993, but would like to continue to receive the *Billfish Newsletter* indicate your name and address on the bottom portion of the ***Billfish Angler Survey*** form and return the form indicating "no fishing." Your name will be retained on the mailing list.

THE BILLFISH TAGGING REPORT CARDS

The 'Billfish Tagging Report' cards should be filled out completely and as accurately as possible. Use Latitude and Longitude and locally known fishing localities when possible. The length of the fish (as illustrated on page 2) can be estimated as "eye-to-fork" (EFL) or as "tip of lower jaw-to-fork" (JFL).

Include any remarks, your Club name and complete address' of the angler and boat captain. Return cards promptly to the Southwest Fishery Science Center. Tagging is of no value unless this Billfish Tagging Report card is returned. Postage is prepaid if mailed in the U.S.A.

Unfortunately we have 18 striped marlin and 2 blue marlin recoveries in our data files without the release information. Remember, tagging serves no purpose unless the 'Billfish Tagging Report' cards are returned.



NOAA, National Marine Fisheries Service
BILLFISH TAGGING REPORT
PLEASE FILL IN DETAILS AND MAIL TODAY.
Please return card
Otherwise tagging is of no value
Tag No: A 027267

Position: 25°53'N 159°49'W north of Hawaii Is.
Species: Pacific Blue Marlin Date: 2/13/94
Estimate, length or weight: Inches 78" EFL Lbs. 90 lbs
Remarks: hook removed — good condition
Angler: Mary Jo Angler
Address: 47-124 Marlin Way Hono. Zip: 96817
Club: Best Billfish Club, Honolulu.
Captain: Bill Fish
Address: P.O. Box 109 Kailua Kona Zip: 96740

Response to this form is voluntary.
OMB 0648-0009, expiration date: 08/31/93
NOAA 88-162, 4/93

Public reporting burden for this collection of information is estimated to average 0.10 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Publications and Information Services Division, NOAA, 6010 Executive Blvd., Rockville, MD 20852; and to David B. Holts, Southwest Fisheries Science Center, P.O. Box 271, La Jolla, CA 92038; and the Office of Management and Budget, Paperwork Reduction Project (0648-0009), Washington, DC 20503

Table 5. Billfish and tuna release and recapture information.

SPECIES	TAGGER/ CAPTAIN	RELEASE DATE	RELEASE LOCATION	RECOVERY DATE	RECOVERY LOCATION	DAYS FREE	MILES/ DIRECTION TRAVELED
Blue Marlin	Tom Wright Tom Siebler	08/25/93	19°30'N 156°00'W Kailua Bay, HI	08/31/93	18°55'N 155°41'W South Point, HI	6	40 SSE
Striped Marlin	— Steve Cravens	3/28/93	20°46'N 156°50'W Lanai, HI	12/31/93	20°01'N 156°01'W Kawaihae Bay, HI	278	67 ESE
Striped Marlin	John Griffith, Jr. Jack Patterson	10/03/93	33°21'N 118°19'W Catalina Island, CA	02/24/93	23°33'N 109°29'W East Cape, Baja, MX	144	865 SSE
Striped Marlin	Carol Holt Doug Barna	10/31/92	20°50'N 157°00'W Lanai, HI	12/29/92	17°30'N 155°30'W S of South Pt., HI	59	219 SSE
Striped Marlin	Karl Kogler Michele Kogler	08/15/92	33°44'N 119°06'W Santa Barbara Is., CA	05/27/93	30°43'N 116°29'N Cape Colnett, MX	285	240 SSE
Striped Marlin	Stan Ecklund Stan Ecklund	10/18/92	33°22'N 119°03'W Santa Barbara Is., CA	05/20/93	23°09'N 151°58'W Hawaii	214	2,068 WSW
Striped Marlin	Mark Davis Skeet Warren	03/12/93	20°30'N 156°37'W Kahoolawe, HI	04/18/93	18°20'N 157°23'W SW of So. Point, HI.	37	138 SSW
Striped Marlin	— Doug Barna	02/09/93	20°40'N 156°59'W Lanai, HI	10/08/93	26°17'N 158°30'W N of Kauai, HI	241	349 NNW
Striped Marlin	Russ Smith Marty Sands	10/30/93	21°15'N 157°05'W Molokai, HI	11/03/93	20°40'N 155°00'W E. of Maui, HI	4	130 ESE
Striped Marlin	— Jeff Hollings	11/20/93	20°41'N 156°51'W Lanai, HI.	12/15/93	21°30'N 154°40'W NE of Maui, HI	25	140 ENE
Swordfish	Tony Geisman	04/24/92	29°00'N 154°00'W N of Hawaii	04/23/93	29°48'N 148°43'W N of Hawaii	364	321 ENE
Bigeye Tuna	— Bobby LaRue	03/20/92	29°40'N 153°02'W N of Hawaii	12/22/92	31°40'N 151°39'W N of Hawaii	277	146 NNE
Yellowfin Tuna	NMFS - Research	07/16/93	18°46'N 157°11'W SW of Hawaii	08/29/93	18°42'W 156°16'W SW of Hawaii	44	55 ESE
Blue Shark	Sean VanSommeran	08/01/93	36°48'N 121°50'W Monterey, CA	09/22/93	12°22'N 123°22'W NW of Clipperton Is.	52	1,469 SSW

Your cooperation in the annual ***Billfish Angler Survey*** and the ***Cooperative Marine Game Fish Tagging Program*** is appreciated.

TAGGING SUPPLIES are available to the billfish angler through this office (SWFSC) and the following locations:

Southern California

- San Diego Marlin Cub, San Diego, California
- Balboa Angling Club, Newport beach, California
- Catalina Seafood, end of Avalon Pier, Catalina Island

Hawaii

- Pacific Ocean Research Foundation (PORF), Kailua-Kona
- SWFSC, Honolulu Laboratory, Honolulu

Baja California, Mexico

- Rancho Buena Vista, East Cape
- Rancho Leonero, East Cape

We wish to acknowledge and thank the following Hawaii-based commercial longline vessels for tagging and releasing small swordfish in the north Pacific during 1993.

VESSEL	CAPTAIN	TAGGED
SEEKER II	David Ghigliotty	37
EDWARD G	Tony Geisman	33
MASTER VINCENT	Barney Shirah	24
KELLY ANN	Michael Foy	23
NAVIGATOR	Robert W. Mitchell, Jr.	9
KELLY ANN	Steve Sexton	9
BARBARA H	David Hayworth	8
ALYCIA MARY	Joseph M. Swann	6
BIG DEAL	Jim Anderson	4
PACIFIC SEA	Larry Strader	4
ALYCIA MARY	Mike Swann	3
SANDY DORY	Joe Hamil	3
BARBARA H	Robert Vacchetta	2

TAGGING PRIORITIES

Our current tagging emphasis, by location is:

Southern California	Striped Marlin Broadbill Swordfish
Hawaii	Blue Marlin Striped Marlin Black Marlin Broadbill Swordfish
Mexico	Blue Marlin Black Marlin
Central America	All Billfish
Indo-Pacific	All Billfish
Indian Ocean	All Billfish

Congratulations to Elsbeth Pfenninger for submitting this year's winning photograph for the cover of the '1994 Billfish Newsletter'. The Southwest Fisheries Science Center is looking for good photographs of billfish for the cover of next years 'Billfish Newsletter'. Color or black and white photos of billfish and/or fishing activities are appropriate. We would appreciate sharing your photos and will give you full credit in the 1995 issue. A billfish baseball cap and plaque will be awarded to the winning photographer.

David B. Holts, Fishery Biologist

Southwest Fisheries Science Center
P.O. Box 271
La Jolla, CA 92038
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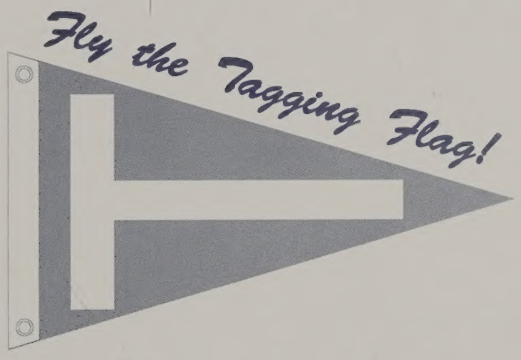

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